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CLAIMS

1. Interactive toy apparatus comprising:  
a toy having a fanciful physical appearance;  
a speaker mounted on the toy;  
a user input receiver;  
a user information storage unit storing information relating to at least one user;  
a content controller operative in response to current user inputs received via said user input receiver and to information stored in said storage unit for providing audio content to said user via said speaker.
2. Interactive toy apparatus according to claim 1 and wherein said user input receiver includes an audio receiver.
3. Interactive toy apparatus according to claim 2 wherein said current user input comprises a verbal input received via said audio receiver.
4. Interactive toy apparatus according to claim 1 and wherein said user input receiver includes a tactile input receiver.
5. Interactive toy apparatus according to claim 1 and wherein said storage unit stores personal information relating to at least one user and said content controller is operative to personalize said audio content.
6. Interactive toy apparatus according to claim 1 and

wherein said storage unit stores information relating to the interaction of at least one user with said interactive toy apparatus and said content controller is operative to control said audio content in accordance with stored information relating to past interaction of said at least one user with said interactive toy apparatus.

7. Interactive toy apparatus according to claim 5 and wherein said storage unit also stores information relating to the interaction of at least one user with said interactive toy apparatus and said content controller also is operative to control said audio content in accordance with information relating to past interaction of said at least one user with said interactive toy apparatus.

8. Interactive toy apparatus according to claim 1 and wherein said storage unit stores information input verbally by a user via said user input receiver.

9. Interactive toy apparatus according to claim 5 and wherein said storage unit stores information input verbally by a user via said user input receiver.

10. Interactive toy apparatus according to claim 7 and wherein said storage unit stores information input verbally by a user via said user input receiver.

11. Interactive toy apparatus according to claim 1 and also

comprising a content storage unit storing audio contents of at least one content title to be played to a user via the speaker, said at least one content title being interactive and containing interactive branching.

12. Interactive toy apparatus according to claim 11 wherein said at least one content title comprises:

a plurality of audio files storing a corresponding plurality of content title sections including:

at least one two alternative content title sections;  
and

a script defining branching between said alternative user sections in response to any of a user input, an environmental condition, a past interaction, personal information related to a user, a remote computer, and a time-related condition.

13. Interactive toy apparatus according to claim 5 and also comprising a content storage unit storing audio contents of at least one content title to be played to a user via the speaker, said at least one content title being interactive and containing interactive branching.

14. Interactive toy apparatus according to claim 13 wherein said at least one content title comprises a plurality of parallel sections of content elements including at least two alternative sections and a script defining branching between alternative sections in a personalized manner.

15. Interactive toy apparatus according to claim 1 and wherein said user information storage unit is located at least partially in said toy.

16. Interactive toy apparatus according to claim 1 and wherein said user information storage unit is located at least partially outside said toy.

17. Interactive toy apparatus according to claim 1 and wherein said content storage unit is located at least partially in said toy.

18. Interactive toy apparatus according to claim 1 and wherein said content storage unit is located at least partially outside said toy.

19. Interactive toy apparatus according to claim 1 wherein the user input receiver comprises:

a microphone mounted on the toy; and  
a speech recognition unit receiving a speech input from the microphone.

20. Interactive toy apparatus according to claim 5 wherein the user information storage unit is operative to store said personal information related to a plurality of users each identifiable with a unique code and wherein said content controller is operative to prompt any of said users to provide said user's

code.

21. Interactive toy apparatus according to claim 5 wherein the user information storage unit is operative to store information regarding a user's participation performance.

22. Toy apparatus having changing facial expressions, the toy comprising:

multi-featured face apparatus including a plurality of multi-positionable facial features; and

a facial expression control unit operative to generate at least three combinations of positions of said plurality of facial features representing at least two corresponding facial expressions.

23. Apparatus according to claim 22 wherein the facial expression control unit is operative to cause the features to fluctuate between positions at different rates, thereby to generate an illusion of different emotions.

24. Toy apparatus according to claim 22 and also comprising:

a speaker device;

an audio memory storing an audio pronouncement; and

an audio output unit operative to control output of the audio pronouncement by the speaker device,

and wherein the facial expression control unit is

operative to generate the combinations of positions synchronously with output of the pronouncement.

25. Toy apparatus for playing an interactive verbal game comprising:

a toy;

a speaker device mounted on the toy;

a microphone mounted on the toy;

a speech recognition unit receiving a speech input from the microphone; and

an audio storage unit storing:

a multiplicity of verbal game segments to be played through the speaker device; and

a script storage defining interactive branching between the verbal game segments.

26. Toy apparatus according to claim 25 wherein the verbal game segments include at least one segment which prompts a user to generate a spoken input to the verbal game.

27. Toy apparatus according to claim 25 wherein at least one segment includes two or more verbal strings and a prompt to said user to reproduce one of the verbal strings.

28. Toy apparatus according to claim 25 wherein at least one segment comprises a riddle.

29. Toy apparatus according to claim 25 wherein at least

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one of the verbal strings has educational content.

30. Toy apparatus according to claim 25 wherein at least one of the verbal strings comprises a feedback to said user regarding the quality of said user's performance in the game.

31. Interactive toy apparatus according to claim 1 and further comprising:

multi-featured face apparatus assembled with said toy including a plurality of multi-positionable facial features; and a facial expression control unit operative to generate at least three combinations of positions of said plurality of facial features representing at least two corresponding facial expressions.

32. Interactive toy apparatus according to claim 31 wherein the facial expression control unit is operative to cause the features to fluctuate between positions at different rates, thereby to generate an illusion of different emotions.

33. Interactive toy apparatus according to claim 31 and also comprising:

an audio memory storing an audio pronouncement; and an audio output unit operative to control output of the audio pronouncement by the speaker device,

and wherein the facial expression control unit is operative to generate the combinations of positions synchronously

with output of the pronouncement.

34. Interactive toy apparatus according to claim 1 and further comprising:

a microphone mounted on the toy;

a speech recognition unit receiving a speech input from the microphone; and

an audio storage unit storing:

a multiplicity of verbal game segments of a verbal game to be played through the speaker device; and

a script storage defining interactive branching between the verbal game segments.

35. Interactive toy apparatus according to claim 34 wherein the verbal game segments include at least one segment which prompts a user to generate a spoken input to the verbal game.

36. Interactive toy apparatus according to claim 34 wherein at least one segment includes two or more verbal strings and a prompt to said user to reproduce one of the verbal strings.

37. Interactive toy apparatus according to claim 34 wherein at least one segment comprises a riddle.

38. Interactive toy apparatus according to claim 34 wherein at least one of the verbal strings has educational content.

39. Interactive toy apparatus according to claim 34 wherein

at least one of the verbal strings comprises a feedback to said user regarding the quality of said user's performance in the game.

40. A method of toy interaction comprising:  
providing a toy having a fanciful physical appearance;  
providing a speaker mounted on the toy;  
providing a user input receiver;  
storing in a user information storage unit information relating to at least one user:  
providing, via a content controller operative in response to current user inputs received via said user input receiver and to information stored in said storage unit, audio content to said user via said speaker.
41. A method according to claim 40 and wherein said storing step comprises storing personal information relating to at least one user and personalizing, via said content controller, said audio content.
42. A method according to claim 40 and wherein said storing step comprises storing information relating to the interaction of at least one user with said interactive toy apparatus and controlling, via said content controller, said audio content in accordance with stored information relating to past interaction of said at least one user with said interactive toy apparatus.

43. A method according to claim 40 and further comprising storing, in a content storage unit, audio contents of at least one content title to be played to a user via the speaker, said at least one content title being interactive and containing interactive branching.
44. A method according to claim 40 and further comprising storing personal information related to a plurality of users each identifiable with a unique code and prompting, via said content controller, any of said users to provide said user's code.
45. A method according to claim 40 and further comprising storing information regarding a user's participation performance.
46. A method according to claim 40 and further comprising:  
providing multi-featured face apparatus including a plurality of multi-positionable facial features; and  
generating at least three combinations of positions of said plurality of facial features representing at least two corresponding facial expressions.
47. A method according to claim 46 and further comprising causing the features to fluctuate between positions at different rates, thereby to generate an illusion of different emotions.
48. A method according to claim 46 and also comprising:  
storing an audio pronouncement; and  
providing said audio pronouncement by said speaker; and

generating combinations of facial positions synchronously with output of the pronouncement.

49. A system for teaching programming to schoolchildren using interactive objects, the system comprising:

a computerized school-child interface permitting a school-child to breathe life into an interactive object by defining characteristics of the interactive object, said computerized school-child interface being operative to at least partially define, in response to school-child inputs, interactions between said interactive object and humans; and

a computerized teacher interface permitting a teacher to monitor the school-child's progress in defining characteristics of the interactive object.

50. A system according to claim 49 wherein the computerized teacher interface permits the teacher to configure the computerized school-child interface.

51. A teaching system for teaching engineering and programming of interactive objects to students, the system comprising:

a computerized student interface permitting a student to breathe life into an interactive object by defining characteristics of the interactive object, said computerized user interface being operative to at least partially define, in response to student inputs, interactions between said interactive object and

humans; and

a computerized teacher interface permitting a teacher to configure the computerized student interface.

52. A computer system for development of emotionally perceptive computerized creatures comprising:

a computerized user interface permitting a user to develop an emotionally perceptive computer-controlled creature by defining interactions between the emotionally perceptive computer-controlled creature and natural humans including at least one response of said emotionally perceptive computer-controlled creature to at least one parameter, indicative of natural human emotion, derived from a stimulus provided by the natural human; and

a creature control unit operative to control the emotionally perceptive creature in accordance with the characteristics and interactions defined by the user.

53. A system according to claim 52 wherein said parameter indicative of natural human emotion comprises a characteristic of natural human speech other than language content thereof.

54. A method for development of emotionally perceptive computerized creatures, the method comprising:

defining interactions between the emotionally perceptive computer-controlled creature and natural humans including at least one response of said emotionally perceptive computer-controlled creature to at least one parameter, indicative of

natural human emotion, derived from a stimulus provided by the natural human; and

controlling the emotionally perceptive creature in accordance with the characteristics and interactions defined by the user.

55. A method for teaching programming to students, the method comprising:

providing a computerized visual-programming based school-child interface permitting a school-child to perform visual programming; and

providing a computerized teacher interface permitting a teacher to configure the computerized school-child interface.

56. A computerized emotionally perceptive computerized creature comprising:

a plurality of interaction modes operative to carry out a corresponding plurality of interactions with natural humans including at least one response to at least one natural human emotion parameter, indicative of natural human emotion; and

an emotion perception unit operative to derive at least one natural human emotion parameter from a stimulus provided by the natural human, and to supply the parameter to at least one of the plurality of interaction modes.

57. A creature according to claim 56 and also comprising a physical body operative to participate in at least one of the

plurality of interactions.

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